

FUJX 18.909
09/928,799REMARKS

This amendment is in response to the Examiner's Office Action dated 4/8/2005. This amendment should obviate outstanding issues and make the remaining claims allowable. Claims 1, 3, and 5 have been amended for clarification purposes without adding new matter. Reconsideration of this application is respectfully requested in view of the foregoing amendment and the remarks that follow.

STATUS OF CLAIMS

Claims 1-19 are pending.

Claims 1 and 3-19 stand rejected under 35 U.S.C. § 102(b) as being clearly anticipated by Hirose (USP 5,598,405).

Claim 2 stands rejected under 35 U.S.C. § 102(b) as being clearly anticipated by Higashiyama et al. (USP 5,225,793).

Claims 1, 3, and 5 have been amended for clarification purposes without adding new matter.

OVERVIEW OF CLAIMED INVENTION

The presently claimed invention provides for a phase lock oscillator comprising an oscillating section and a limit discriminating section. The oscillating section comprises a phase-locked loop having a reactive element for generating a signal with a predetermined frequency and the limit discriminating section varies the reactance of the reactive element when discriminating an instant preceding an instant which is a limit that said phase-locked loop is capable of maintaining its lock state (i.e., the limit in the state of the phase-locked loop that is to be secured to set the oscillation frequency of a voltage controlled oscillator to a certain value). The certain

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value of the oscillation frequency is set to a value within its variable range, and even when the oscillation frequency is renewed, it is set to the desired value within its range.

The presently claimed invention also provides for a phase lock oscillator having a voltage controlled oscillator whose oscillation frequency varies according to a control voltage, wherein said voltage controlled oscillator comprises a resonator, a limit discriminating section, and a controlling part. The limit discriminating section detects if the control voltage has reached a predetermined value and the controlling part varies the resonance frequency of the resonator at a time of the detection by the limit discriminating section.

The present invention also provides for communication equipment comprising a transmitting part for transmitting transmission information by using an output signal of a phase lock oscillator which has a phase-locked loop including a reactive element and whose oscillation frequency varies according to an input signal. The phase lock oscillator comprises a limit discriminating section and a controlling part. The limit discriminating section discriminates an instant preceding an instant which is a limit that said phase-locked loop is capable of maintaining its lock state and the controlling part starts a processing of varying a reactance of the reactive element at a first instant succeeding the preceding instant, when the preceding instant is detected by the limit discriminating section. The controlling part controls the transmitting part to transmit the transmission information at a higher transmission rate than a transmission rate applied immediately before said preceding instant, wherein the transmission is performed during a specified period from an instant at which the preceding instant is detected, to the first instant; or after a predetermined time elapses from the first instant.

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The present invention also provides for communication equipment comprising a receiving part for receiving a reception signal by using an output signal of a phase lock oscillator which has a phase-locked loop including a reactive element and whose oscillation frequency varies according to an input signal. The phase lock oscillator comprises a limit discriminating section and a controlling part. The limit discriminating section discriminates an instant preceding an instant which is a limit that said phase-locked loop is capable of maintaining its lock state and the controlling part starts a processing of varying a reactance of the reactive element at a first instant succeeding the preceding instant, when the preceding instant is detected by the limit discriminating section. The controlling part controls the receiving part to perform a receiving processing of the reception signal at a higher transmission rate than a transmission rate applied immediately before said preceding instant, wherein the reception is performed during a specified period from an instant at which the preceding instant is detected, to the first instant; or after a predetermined time elapses from the first instant.

REJECTIONS UNDER 35 U.S.C. § 102

Claims 1 and 3-19 stand rejected under 35 U.S.C. § 102(b) as being clearly anticipated by Hirose (USP 5,598,405). To be properly rejected under 35 U.S.C. § 102(b), each and every element of the rejected claim(s) must be disclosed in a single cited reference. The applicant, however, contends that the presently claimed invention can neither be anticipated nor rendered obvious in view of the Hirose reference.

Hirose provides a TDMA/TDD type transmitter-receiver having a phase control loop (which includes at least a voltage-controlled oscillator (VCO) being adapted to act as a carrier oscillator when performing a transmissions and to act as a local oscillator when performing a

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reception) and a loop filter, wherein the phase control loop is adapted to control a frequency of oscillation of the VCO. In this transmitter-receiver of Hirose, the phase control loop is closed during a period of a time slot just preceding a transmission time slot and during a period of a time slot just preceding a reception time slot. Further, according to Hirose, the phase control loop is opened during periods of the transmission and reception time slots, and, when the loop is opened, the frequency of oscillation of the voltage-controlled oscillator is controlled according to a charging voltage of the loop filter.

With respect to independent claims 1, 3, and 5, the examiner, on pages 2-3 of the office action of 04/08/2005, cites column 2, lines 37-47, column 3, lines 36-47, and column 9, line 25 – column 10, line 2 of the Hirose reference as anticipating all of the limitations of applicant's claims. A closer reading of the citations of column 2 and column 3 (which references figure 4 of the Hirose patent) merely reveal a prior art configuration of an oscillation circuit employed in a transmitter-receiver. Similarly the citations of columns 9-10 merely reveal the changes in states of various portions of the oscillation circuit shown in figure 1 of Hirose.

Conspicuously absent in the citations or the entire Hirose reference is a teaching or suggestion for triggering the reactance of a reactive element when either the limit discriminating section discriminates the instant preceding the limit that the phase-locked loop can maintain its locked state (i.e., the limit in the state of the phase-locked loop that is to be secured to set the oscillation frequency of a voltage controlled oscillator to a certain value), a limitation of claim 1, or at the first instant which succeeds the instant preceding the limit that the phase-locked loop can maintain its locked state, a limitation of claims 3 and 5.

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Furthermore, conspicuously absent in the Hirose reference is a teaching or suggestion for a controlling part that utilizes the output of the phase lock oscillator to decide the rate of transmitting or receiving information signals, a limitation of claims 3 and 5. It should be noted that, in contrast, Hirose utilizes a voltage controlled oscillator instead of a phase lock oscillator to decide the frequency of time slots alternately performing transmitting and receiving functions.

Hence, applicant contends that the Hirose reference fails to at least anticipate or render obvious at least the limitations of the limit discrimination section as taught in applicant's claims 1, 3, and 5 and the controlling part as taught in applicant's claims 3 and 5. Hence, applicant respectfully requests the examiner to withdraw the rejections with respect to claims 1, 3, and 5.

Applicant wishes to note that there appears to be a typographical error on page 6 of the office action of 04/08/2005, wherein the examiner states that claim 3 (which is also rejected on page 2 of the same office action as being anticipated by the Hirose reference) is rejected as being anticipated by the Higashiyama et al. reference. In reading the actual details of the rejection, applicant believes that the rejection with respect to the Higashiyama et al. reference applies to claim 2. Hence, the following discussion is presented with the assumption that the rejection on page 6 of the office action is with respect to applicant's claim 2.

Claim 2 stands rejected under 35 U.S.C. § 102(b) as being clearly anticipated by Higashiyama et al. (USP 5,225,793). To be properly rejected under 35 U.S.C. § 102(b), each and every element of the rejected claim(s) must be disclosed in a single cited reference. The applicant, however, contends that the presently claimed invention can neither be anticipated nor rendered obvious in view of the Higashiyama et al. reference.

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Higashiyama et al. teach a VCO system that has a limiter circuit (damping circuit), at an output terminal, that operates at more than a set oscillation level. According to Higashiyama et al.'s setup, the absolute value of a load at the output terminal is decreased, thereby ensuring not only a variable oscillation range on the high frequency side but also a symmetrical capture range of the PLL.

On page 6 of the office action of 04/08/2005, the examiner states that the Higashiyama et al. reference, in columns 1 (lines 40-44, 62-68), and 3 (lines 4-12, 33) teaches the limitations of "detecting that said control voltage reaches a predetermined value" and "varying a resonance frequency of said resonator at a time of the detection". A closer reading of the citations suggests otherwise. For example, column 1, lines 40-44 merely teaches that "to initialize the VCO without adjustment, the initial oscillation frequency ... must be a parallel frequency inherent in the ceramic resonator 14". Similarly, the citations in columns 3 and 4 merely refer to the limiter circuit that is used to attenuate the oscillation output.

Conspicuously absent in the citations or the entire Higashiyama et al. reference is a teaching for triggering the reactance of the reactive element when it is detected that a control voltage reaches a predetermined value – a limitation of claim 2.

Hence, applicant contends that the Higashiyama et al. reference fails to at least anticipate or render obvious at least the limitations of the "controlling part" as taught in applicant's claim 2. Hence, applicant respectfully requests the examiner to withdraw the rejections with respect to claim 2.

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If the examiner feels that the Hirose reference still remedies the "limit discrimination section" limitation as taught in applicant's claims 1, 3, and 5 or the "controlling part" limitation as taught in applicant's claims 3 and 5, or the examiner feels that the Higashiyama et al. reference remedies the "controlling part" limitation as taught by applicant's claim 2, applicant respectfully reminds the examiner that it is the duty of the examiner to specifically point out each and every limitation of a claim being rejected as per §1.104(c)(2) of Title 37 of the Code of Federal Regulations and section 707 of the M.P.E.P., which explicitly states that "the particular part relied on must be designated" and "the pertinence of each reference, if not apparent, must be clearly explained and each rejected claim specified."

SUMMARY

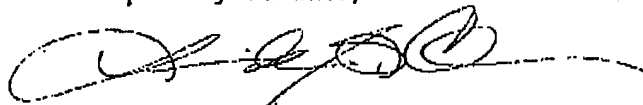
As has been detailed above, none of the references, cited or applied, provide for the specific claimed details of applicant's presently claimed invention, nor renders them obvious. It is believed that this case is in condition for allowance and reconsideration thereof and early issuance is respectfully requested.

This amendment is being filed with a petition for extension of time. The Commissioner is hereby authorized to charge the petition fee, as well as any deficiencies in the fees provided to Deposit Account No. 50-1290.

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If it is felt that an interview would expedite prosecution of this application, please do not hesitate to contact applicant's representative at the below number.

Respectfully submitted,



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